Bioversity International

BIOVERSITY INTERNATIONAL NUTRITION STRATEGY 2011-2021

Resilient food and nutrition systems: Analyzing the role of agricultural biodiversity in enhancing human nutrition and health.

J. Fanzo/Bioversity International

THE GLOBAL MALNUTRITION CHALLENGE

One of the world's greatest challenges is to secure access for all to adequate supplies of food that is healthy, safe, and of high quality, and to do so in an environmentally sustainable manner. However, with the growing demands of an ever-increasing human population, it remains unclear how our current global food system will sustain itself. Additional factors such as climate change, urbanization, social conflict and extreme poverty, as well as overly stressed ecosystems and biodiversity, make it clear that there has never been a more urgent time for collective action to address food and nutrition security globally.

An estimated 925 million people are hungry worldwide. In addition, 195 million children under five years of age are stunted. Of these children, 90% live in just 36 countries. Micronutrient deficiencies, otherwise known as hidden hunger, undermine the growth, development, health and productivity of over two billion people. At the same time, across the developed and developing world, an estimated one billion people are overweight and 300 million are obese, factors that contribute to increased risk of non-communicable diseases such as diabetes and heart disease.

Redirecting the global agricultural system to ensure better nutrition is critical. The current global agricultural system produces enough food in total, although access to nutritious foods for all remains a challenge. For this reason, it is imperative that researchers and development professionals devise new and sustainable approaches to improve the quality and variety of food produced and consumed around the world. Other innovations in agriculture and food science will also be essential to improve dietary diversity and nutrition.

To achieve these improvements, nutrition must be at the forefront of the major goals of agriculture and production systems, so that agricultural biodiversity can serve as an avenue to improve dietary diversity and quality and, in turn, health, at the same time as it aids in the restoration and preservation of ecosystems.

Bioversity International
Via dei Tre Denari 472a
00057 Maccarese, RM
Italy

www.bioversityinternational.org

Phone: +39 06 61181
Fax: +39 06 6118276
Email: bioversity@cgiar.org

For further information,
please contact: j.fanzo@cgiar.org

More details can be found in
the full nutrition strategy at:
www.bioversityinternational.org

What is agricultural biodiversity?

Agricultural biodiversity specifically pertains to the biological variety exhibited among crops, animals and other organisms used for food and agriculture, as well as the web of relationships that bind these forms of life at ecosystem, species, and genetic levels. It includes not only crops and livestock directly relevant to agriculture, but also many other organisms that have indirect effects on agriculture such as soil fauna, weeds, pests and predators.

Agricultural biodiversity is the basis of the food and nutrition value chain and its use is important for food and nutrition security. This agricultural biodiversity includes species with under-exploited potential for contributing to food security, health, income generation, and ecosystem services. Terms such as underutilized, neglected, orphan, minor, promising, niche, local and traditional are used interchangeably to describe these potentially useful species (both plant and animal) which are not mainstream, but which have significant local importance and considerable global potential to improve food and nutrition security.

Bioversity International's nutrition framework for action

Bioversity is a leading research for development organization dedicated to the use and conservation of biodiversity in agriculture to combat poverty and malnutrition and to enhance the sustainability of agriculture. Bioversity's Nutrition Strategy for 2011-2021 centres on using food and nutrition system approaches to improve human nutrition and health. The major goal of the strategy and subsequent programme is to promote the use of biodiversity within food production systems and to provide nutritionally-rich food sources that contribute to dietary diversity and, potentially, to better nutrition and health.

Target beneficiaries

Bioversity's work will focus on agro-ecosystems that have a significant agricultural biodiversity potential in areas burdened with a high proportion of malnourished individuals and in developing, transitioning and middle income countries. The 36 countries that are home to 90% of the world's stunted children will receive priority attention. Of these countries, further priority will be given to those with functioning agricultural systems and with the potential to improve their agriculture, or which demonstrate a readiness to accelerate action in nutrition.

Smallholder farmers and their communities in low-income countries will be the key beneficiaries of the strategy. Attention will be also dedicated to creating demand and providing access to nutritious foods among people living in urban and peri-urban settings. Communities at risk of losing traditional food systems will be a further focus.

Implementing the strategy

Bioversity's Nutrition Strategy has four objectives that fall into two broader categories: research and evidence, and development and policy.

Objective one:

To strengthen empirical evidence of agricultural biodiversity's role in nutrition and health.

To generate better understanding of the links among agricultural biodiversity, diet quality, nutrition and health as well as the overall role of nutrition in agricultural systems. By establishing a robust set of interdisciplinary projects in relevant agro-ecological systems, research will determine the main drivers of agricultural biodiversity and establish the role of agrobiodiverse practices and landscapes in delivering better dietary quality and diversity and improved health and nutrition outcomes for rural communities.

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Component One: Agricultural biodiversity in diets, health and nutrition. To describe and define the role of agricultural biodiversity in diets, health and nutrition, including the nutritional value, use and consumption patterns of foods derived from agrobiodiverse landscapes and their impact on human nutrition and health outcomes.

Component Two: Nutritional anthropology and sociology of agricultural biodiversity. To explore food sovereignty and the socio-cultural and traditional roles of foods in communities and households, including why we eat what we eat, the right to high-quality foods and the role of traditional food systems in decisions about consumption.

Objective two:

To ensure that the production of more nutritious foods through commercial pathways reflects agrobiodiverse practices and cultural and consumer preferences.

To understand the role of markets and value chains in improving nutrition and dietary diversification directly, through an increase in the production of nutritious foods sourced from biodiverse systems, as well as indirectly, through an increase in income for smallholder farmers.

Smallholder farmers can diversify their diet and improve their nutritional status both by producing more biodiverse foods themselves and by accessing more nutritious and diverse foods in markets through a rise in their disposable incomes. Emphasis will be on understanding what role nutritious local and traditional foods and neglected and underutilised species play in creating demand for biodiverse products by rural and urban consumers and in boosting disposable income for smallholder farmers.

Component One: Consumer demand, knowledge and access as drivers for smallholder farmers to produce and consume more nutritious, diversified foods. To increase understanding of how local and international consumer demand can increase the supply of nutritious food by smallholder farmers and how smallholder farmers, as net buyers of food, can access nutrient-rich foods sourced from agrobiodiverse farming systems in informal and formal markets.

Component Two: Agricultural biodiversity as a mechanism for boosting disposable income for smallholder farmers allowing them to access more nutritious foods. To strengthen our understanding of how agricultural biodiversity and the production of local and traditional foods can lead to a rise in disposable income for smallholder farmers and what mechanisms can be put in place to use this additional income for nutritious items for the household.

Objective three:

To determine best practices and delivery systems of agricultural biodiversity in nutrition and health development programmes.

To understand how best to integrate and implement the tools and methodologies of agricultural biodiversity in order to positively impact nutrition development programmes and food assistance on the ground. Bioversity will undertake operations research, through rigorous monitoring and evaluation of the delivery systems used in development and food systems approaches in various regional agro-ecosystem hubs. The ultimate goal is to ensure that dietary quality and diversity and eventually health and nutrition outcomes improve through integrated development activities.

Component One: Integration of agricultural biodiversity in development programmes. In collaboration with partners, to design, monitor and evaluate development programmes that integrate agricultural biodiversity with agriculture and nutrition interventions and to generate evidence of these programmes' health and nutrition benefits and cost effectiveness.

Component Two: Value of agricultural biodiversity in food and nutrition systems.To assess the added value of agricultural biodiversity when integrated with other components of a food system approach, including ecosystem services, health care, education, water and sanitation, infrastructure and agriculture production systems.

Objective four:

To mainstream the role of agricultural biodiversity into public health and nutrition policy and practice by sharing evidence and providing local solutions.

Bioversity's nutrition programme will avail itself of opportunities to contribute to international efforts that address global food concerns, such as the response to soaring food prices across the globe, food sovereignty and the effects of globalization of diets on health. Bioversity will achieve this contribution through its assessment of the nutritional and livelihood benefits of local

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food products derived from the rich agricultural biodiversity in the developing world. Similarly, the nutrition programme will establish cross-sectoral policy platforms to promote the mainstreaming of biodiversity, which will create synergies with relevant global initiatives and will provide linkages to national programmes and policy frameworks.

The evidence gathered will be shared with partners, governments and organizations for integration into larger public health and agriculture policy discussions and large-scale programming. These efforts will help to promote the effective conservation and use of agricultural biodiversity.

Delivering the strategy

Bioversity will undertake thorough research and analysis of how food and nutrition systems function in different settings in order to better understand the challenges and opportunities the world faces. Bioversity will thus identify the gaps that can be filled to ensure improved system resiliency.

Research and policy partnerships

Smallholder farmers and their communities, as the ultimate beneficiaries, will be involved at every level in the research. Bioversity will ensure that a diverse team of scientists and practitioners from different disciplines, including nutrition, public health, ethnobotany, economics, ecology, agronomy and anthropology will be engaged in the process. Most of the nutrition programme will focus on sub-Saharan Africa, Central America and South Asia.

Bioversity collaborates with research organizations and universities in the developed and developing world. An integrated global framework to enhance the conservation and use of agricultural biodiversity for dietary diversity, nutrition, health and sustainable development requires working towards further collaboration and convergence of priorities within the agriculture, health, business and environment sectors. To ensure this convergence, Bioversity will continue to work in collaboration with partners, ensuring that research is translated into better development practices and policies with a multi-sectoral impact.

Work will be expanded within the Consortium of International Agricultural Research Centers which will ensure better collaborations within the Consortium on joint research initiatives. Bioversity will also work with the United Nations system in order to complement the UN's work at global and country levels. Bioversity will ensure that evidence gained from its nutrition programme is shared with the Scaling Up Nutrition movement for incorporation into country plans.

Building capacity

In response to global mandates to assume a leading and coordinating role linking agricultural biodiversity conservation and use, Bioversity works to strengthen the capacity of developing countries to undertake biodiversity and nutrition research across disciplines. It recognizes that achieving long-term impact and the global potential of the strategy demands an improved capacity for promotion, social marketing and education regarding local food biodiversity, nutrition and ecosystem health at national, regional and global levels.

Monitoring and evaluation

Monitoring and evaluation will be an integral element of the research agenda within each objective of the strategy. A logical framework has been developed and over the years we will demonstrate clear, realistic, measurable and rational pathways needed to achieve impact in collaboration with our partners.

Bioversity will be accountable for the provision of inputs, carrying out activities and producing both lower-order and higher-order outputs. Subsequently, we will become responsible, along with partners, for the research outcomes generated and we will be engaged in the delivery of the development outcomes. We give high importance to identifying partners who will share responsibility with us for the achievement of the research outcomes and who will play an important role in the delivery of the development results.

Bioversity will monitor and evaluate the implementation of this strategy on an annual basis with an external Scientific Advisory Council.

Priority setting

Objectives one and two, with their focus on evidence building, will be the major priorities in the first five years and through the life of the strategy. Objective three will be the focus of years six through nine and objective four will be the focus of years seven through ten.

Key priority countries will include the 36 countries in which 90% of the world's stunted children live. Each component may require distinct partnerships and tailored research approaches, methods and programmatic designs. We plan to ensure that each objective, along with the different components, is addressed within holistic research projects on similar sites, because the various components are what together provide the impact on nutrition and livelihoods.

Conclusion

Bioversity is excited by the task ahead and we believe we can meet the challenges we face. We aim to show that agricultural biodiversity, underutilized crops and local and traditional foods can be powerful tools to combat poverty and malnutrition while preserving healthy ecosystems. This innovative strategy will be used to channel and focus our efforts and will retain an inherent flexibility as we seek to improve and expand it. We see this as the beginning of a new and exciting journey and we hope that the work we do benefits the partners we work with, the development community and, most of all, the communities who are our beneficiaries.